



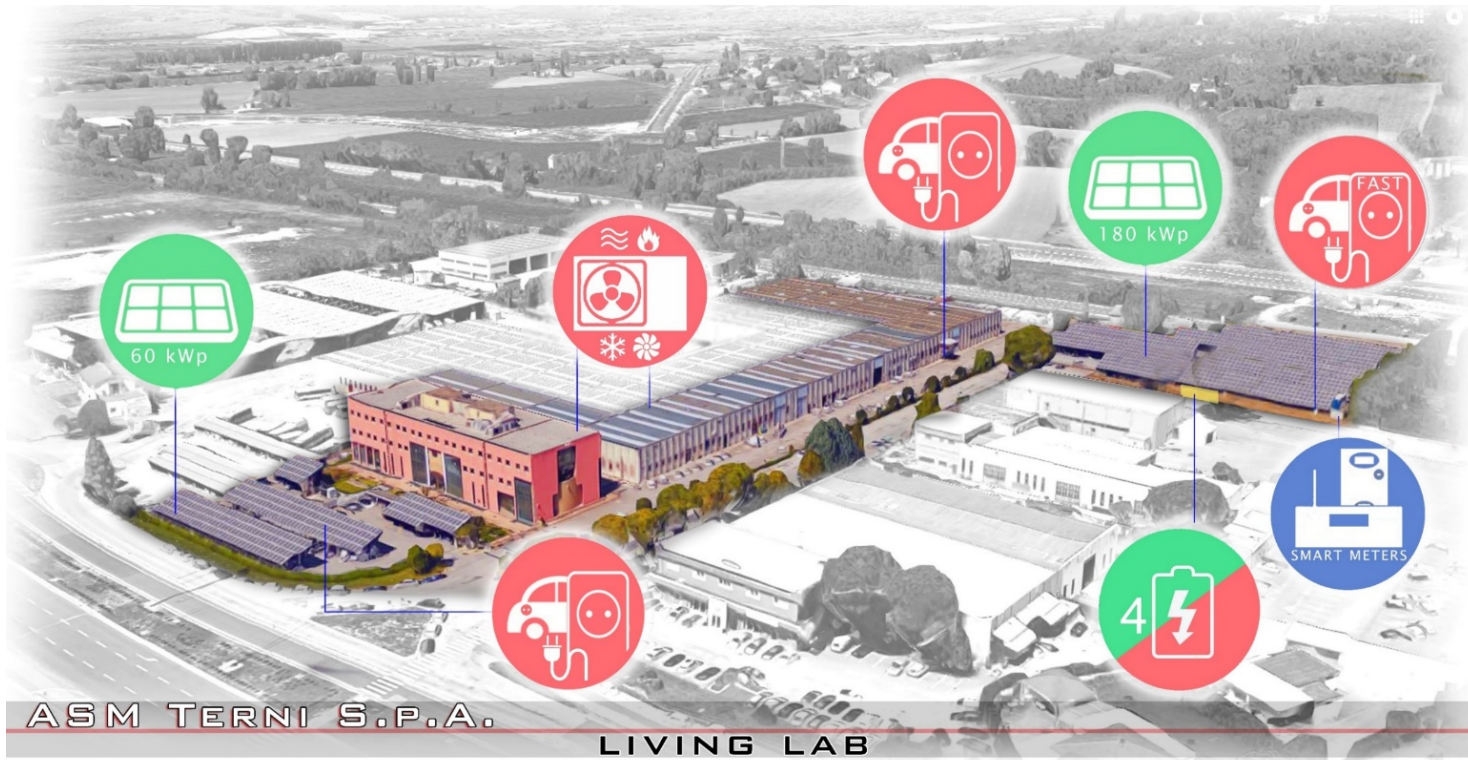
# SOFIE - Secure Open Federation for Internet Everywhere



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SOFIE Energy Flexibility Marketplace Pilot



18.6.2020



# DSO and Flexibility handling

DSOs are facing RES and EVSE penetration

→ They need to dramatically increase Hosting Capacity

They can adopt flexibility marketplace for reducing the highest costs on infrastructure improvement (Shaving peaks of PV and EVSE).

→ Flexibility can reduce capital expenditures of a DSO.

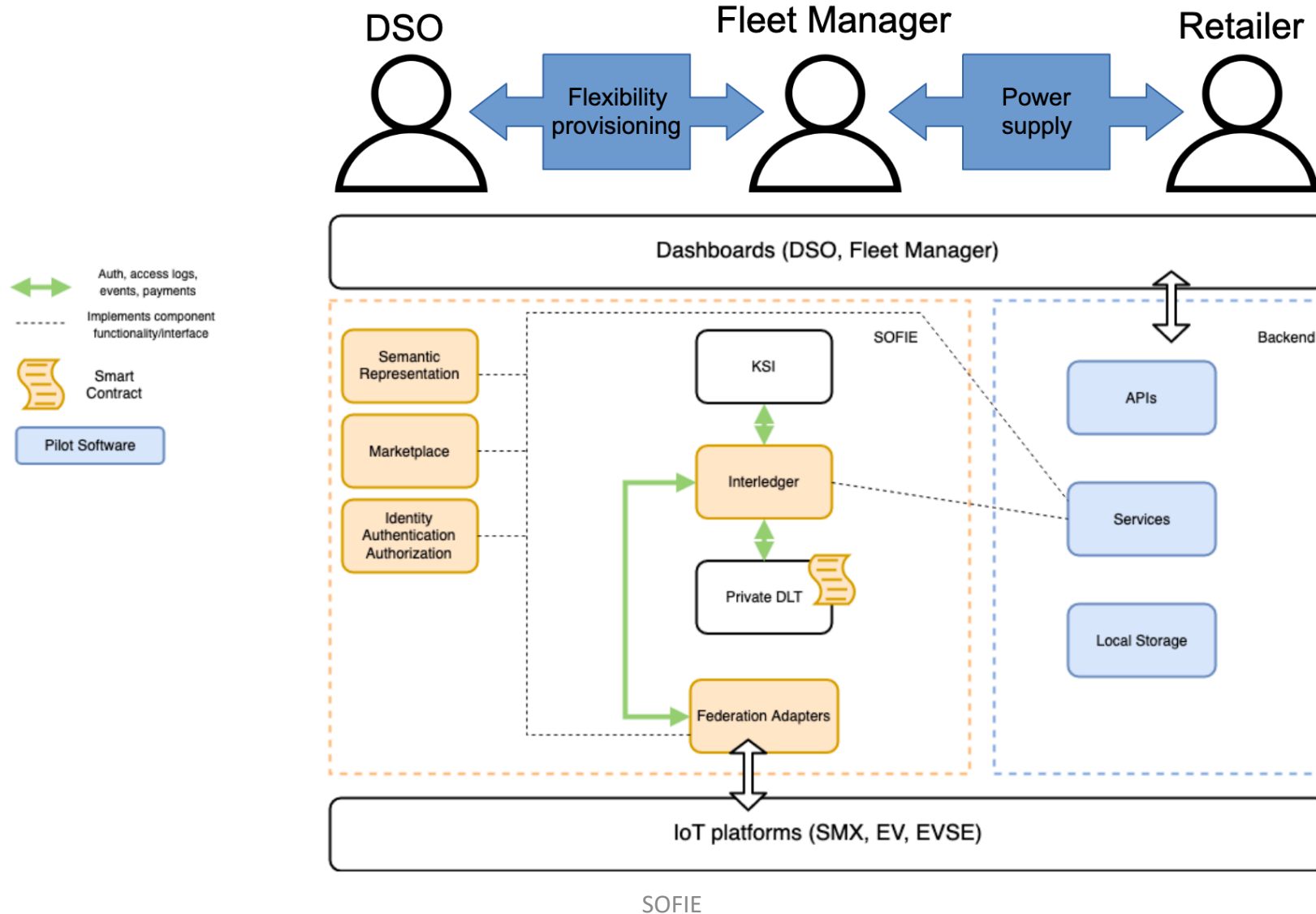
Additional Benefits for DSOs:

- Enabling new business models
- Increasing awareness and levers for improving power quality

Benefits for Fleet Managers:






- Reducing the operational costs thanks to the energy retail marketplace
- The incentives awarded by participating in flexibility market covers part of the electric supply

# Actors and Pilot Architecture





# DSO Dashboard

All campaigns						
#	AUTHOR	STATUS	DECIDED	WINNING OFFER	PAID	
1	0x745A670b7E672a28E5d320E201407eB4741268d5	OPEN	NO	NO	NO	
2	0x745A670b7E672a28E5d320E201407eB4741268d5	CLOSED	YES	6	YES	
3	0x745A670b7E672a28E5d320E201407eB4741268d5	CLOSED	YES	7	NO	
4	0x745A670b7E672a28E5d320E201407eB4741268d5	CLOSED	YES	8	NO	
5	0x745A670b7E672a28E5d320E201407eB4741268d5	CLOSED	YES	10	NO	


  

DETAILS	
Period: 2019-05-31T04:00:00 - 2019-05-31T09:00:00	
Zone: Zone_1	
Quantity: 3000	
maxPrice: 50	
Deadline: 2019-05-30T22:00:00	

OFFERS		
#	AUTHOR	PRICE
9	0xBff297924dE1c48fAa09C390406889bA05Ed54b6	49
10	0x27A4424A0Ed6C18154fE8b790a8Fde001d1897dB	40
11	0x6A6dd12d87322b66D67DFef41e6bd1d8184114d4	40
12	0x1AA9aDE6bfb35c22b1d66fa55bb043F705a188F0	45
13	0x86bCcf1e89775B6e2d56266F1665c7835522c324	44

6	0x745A670b7E672a28E5d320E201407eB4741268d5	CLOSED	YES	14	YES	
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[Refresh](#) [Pay Request](#)

# E-mobility Dashboard

## EVP Dashboard

6 EVs

3 Charging stations

Search city, address etc.

EVs  
 Charging stations

1 free socket  
 EVSE not involved in DR

Free sockets  
 EVSE involved in DR

0 free sockets  
 EVSE involved in 2nd DR



## Energy Request

List Requests

List Won list JSON

#1 - Zone_1	10 Token	1000 Wh	Period 25/05/19, 07:09 ---- 25/05/19, 08:09	1 Offers
#2 - Zone_2	10 Token	1000 Wh	Period 25/05/19, 11:09 ---- 25/05/19, 13:09	1 Offers
#6 - Zone_1	10 Token	400 Wh	Period 03/06/19, 06:59 ---- 03/06/19, 15:59	1 Offers

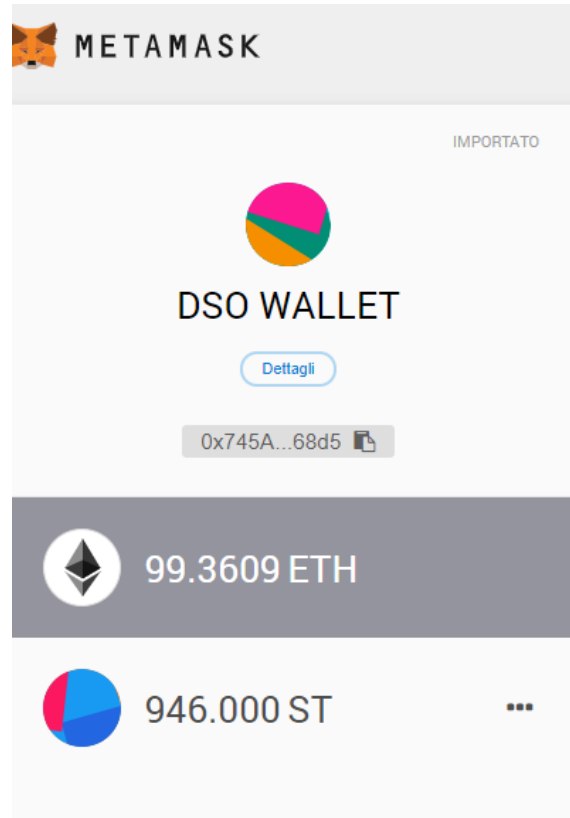
# E-mobility Dashboard

Request info
✕

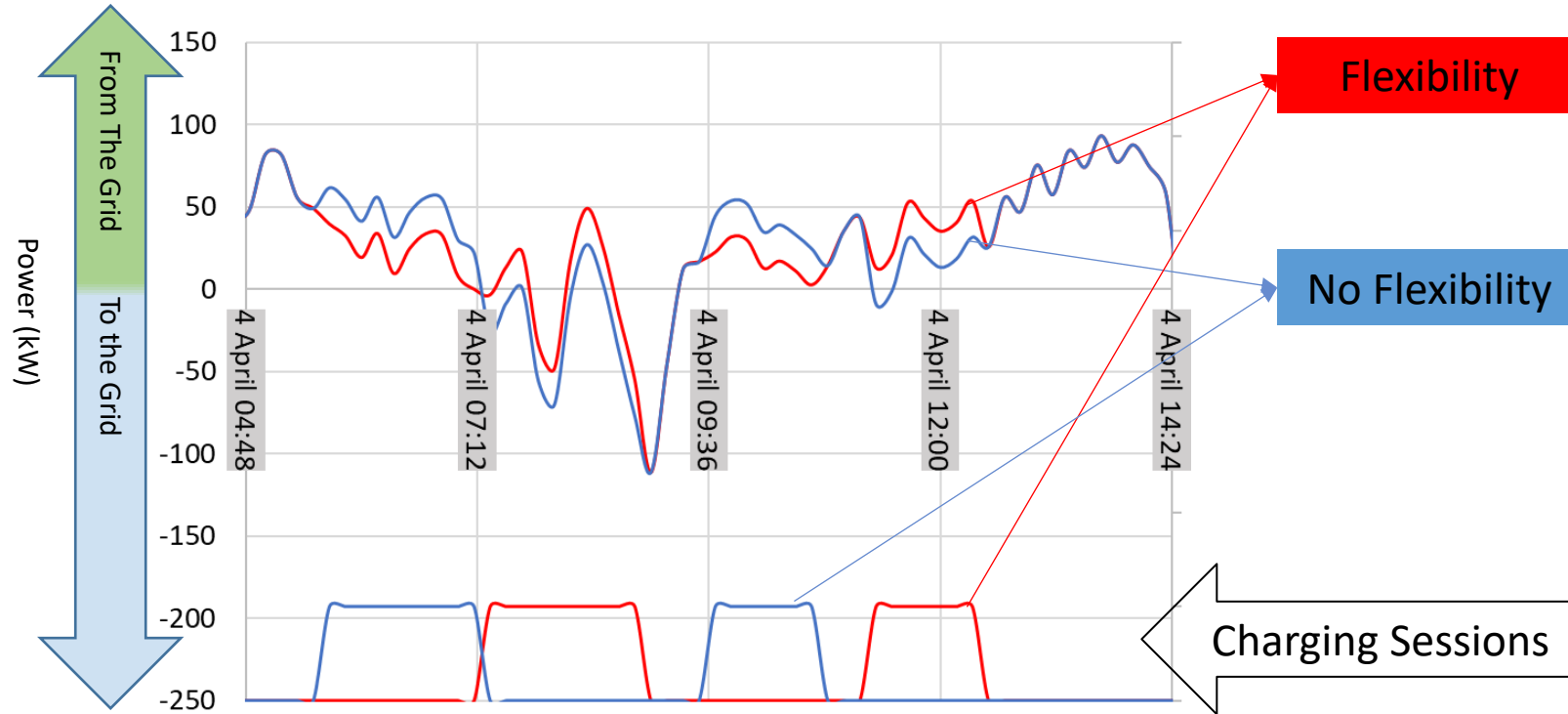
Request ID	4
Author	0x74C8633dc77E4Ff45e50df6008fA0D9C488c984b
Status	OPEN
Type	Zone_2
Max Price	60 Token
Quantity	5000 Wh
Quantity charged	<div style="display: flex; align-items: center;"> <div style="width: 74%; height: 15px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, green 2px, green 4px);"></div> <span style="margin-left: 10px;">74%</span> </div>
Deadline	10/06/2019 22:00
Period	11/06/2019 12:25 ---- 13/06/2019 13:25



# Transaction finalisation



# Flexibility handling for RES balance



Charging Sessions rescheduling increases self-consumption without jeopardizing the activities of the fleet.

Evaluation carried out for 2019 taking into account operational constraints

# SOFIE Money Saved



EVP

Admin Language sudo@emotion-team.com

Monitoring [DSO request for the Fleet Managers](#) [Fleet Manager request for the Retailers](#)

FORECASTING CHART

CHARGING STATION ENERGY TREND

MONEY SAVED TREND

CO2 EMISSION SAVED TREND



From  To



# SOFIE CO<sub>2</sub> Emission saved



EVP

Admin Language sudo@emotion-team.com

Monitoring [DSO request for the Fleet Managers](#) [Fleet Manager request for the Retailers](#)

FORECASTING CHART

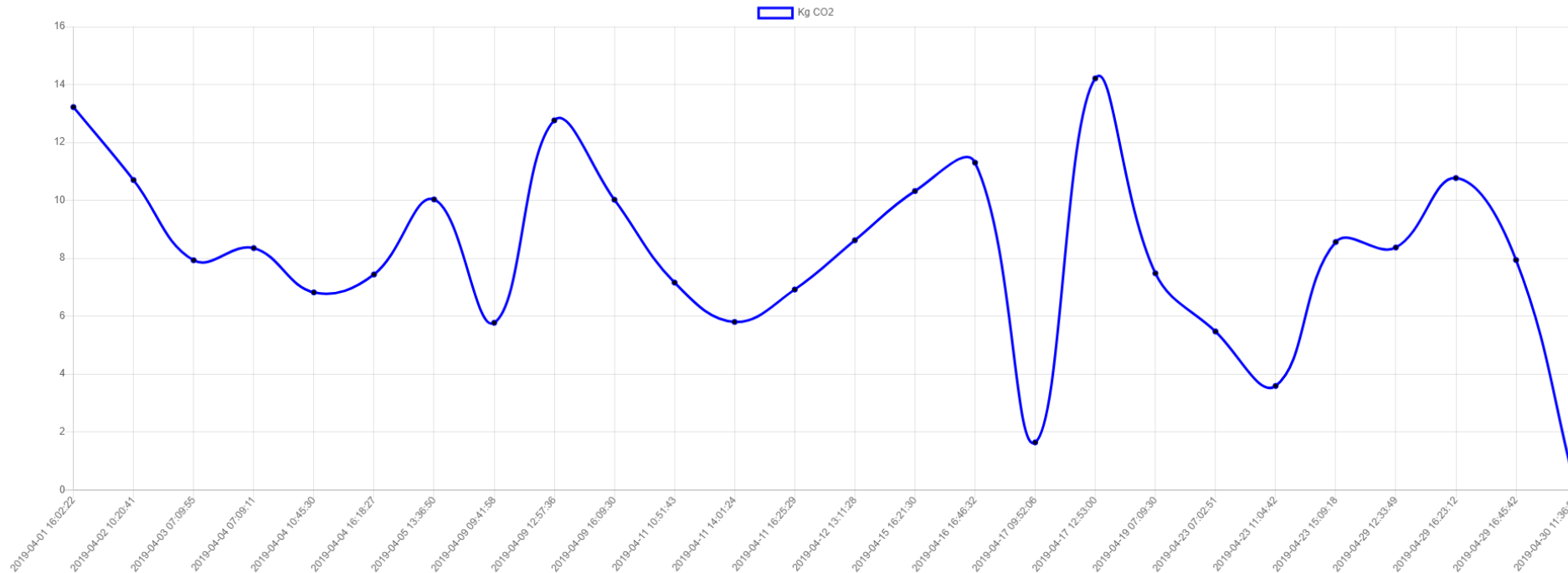
CHARGING STATION ENERGY TREND

MONEY SAVED TREND

CO2 EMISSION SAVED TREND



From 01/04/2019 To 01/05/2019 [Reset Date](#)



# Main benefits of the SOFIE platform

## **For DSO:**

- Use real-time and historical data to forecast the occurrence of grid issues
- Create flexibility requests on the marketplace to balance the local energy supply

## **For Fleet Managers:**

- Help to recharge the batteries of its fleet at advantageous prices
  - Thanks to the marketplace, the most convenient retailer can be selected any time
- The incentive provided by the DSO can cover part of the electric supply

## **For all the users involved:**

- A rapid, user-friendly mechanism to negotiate micro-contracts
- Security, transparency, and auditability of the operations
- Interoperability among different siloed IoT systems



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